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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/641,417	08/16/2000	Noel Morel	33428-PCT-USA-A	4877

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BAKER & BOTTS
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER

FISCHER, JUSTIN R

ART UNIT PAPER NUMBER

1733

DATE MAILED: 07/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/641,417

Applicant(s)

MOREL, NOEL

Examiner

Justin R Fischer

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimura (US 5,386,863, newly cited). As best depicted in Figure 1, Hashimura '863 discloses a pneumatic tire comprising a pair of bead portions, a pair of sidewall portions, and a crown portion, wherein said crown portion is formed by laying a single mix of tread over the radially outer edges of the sidewall rubber mix to form a circular junction. The references, however, do not specifically provide a quantitative measurement of the junction point with respect to the carcass structure and the crown, as required by the claimed invention. In any event, Hashimura '863 does provide several measurements that suggest that this tire design meets the limitations of the claimed invention, with respect to the junction point. As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to manufacture a pneumatic tire in accordance to the limitations of the claimed invention, as set forth below.

It should initially be noted that the ranges of the claimed invention are defined by distances from the tire axis of rotation. To simplify the calculations, these ranges have been recalculated with respect to more conventional distances that are measured from

the bead seat (analogous to R_B of claimed invention). Therefore, the following two limitations are required by the claimed invention:

(a) radial position of junction point is between 80% and 90% of the radial height of the equatorial crown radius of the tread portion

(b) radial position of junction point is between 90% and 100% of the radial height of the carcass structure at the equatorial plane, wherein said junction point is less than the relevant carcass height.

Regarding limitation (a), Hashimura '863 depicts a junction point that is above a position defined by 0.75 SH, where SH is a radial distance measured from the base of the bead core to the equatorial crown radius. To relate this distance to the claimed invention, the measurement should be taken from the bead seat position, which suggests that the junction point occurs at an even higher radial position with respect to the section height. Furthermore, although it is unclear if the drawings are "working drawings", they can be used to obtain gross relative dimensions, which do suggest a design in which the junction point is between 80% and 90% of the equatorial crown radius. Thus, the reference (a) expressly depicts a junction point at a radial position that is greater than 0.75 SH (rubber beneath bead actually increases percentage with respect to equatorial crown radius to remain consistent with measurement of claimed invention) and (b) provides a tire design in which the "gross relative dimensions" meet the limitations of the claimed invention. Based on these details, one of ordinary skill in the art at the time of the invention would have found it obvious to form the junction point at the specified distance with respect to the equatorial crown radius.

With respect to limitation (b), Hashimura '863 depicts the junction point as being slightly below the equatorial radius of the carcass structure. While it is recognized that the reference fails to provide any quantitative measurement to relate the relevant components, it is evident from the drawings of Hashimura '863 and conventional tire structure that the junction point of Hashimura '863 falls between 90% and 100% of the equatorial radius of the carcass structure. First, the reference does depict said junction point as being just below the equatorial radius of the carcass structure, such that one of ordinary skill in the art would not have expected the separation to be greater than 10% of the equatorial radius of the carcass structure. Second, based on the gross relative dimensions, Figure 1 of Hashimura does suggest that the junction point is extremely close to the equatorial radius of the carcass structure (approximately 93%). Thus, in viewing Hashimura, one of ordinary skill in the art at the time of the invention would have readily appreciated and expected such a tire design to have a junction point in accordance to the limitations of the claimed invention. Lastly, with respect to each of the previously mentioned limitations, applicant has failed to provide any unexpected results to establish a criticality for the claimed tire design and as such, one of ordinary skill in the art at the time of the invention would have found the broad ranges of the claimed invention to have been obvious in view of Hashimura '863.

Regarding the use of gross relative dimensions, it is known that such dimensions can be obtained from a given drawing even if it is unclear if they are "working drawings". To further evidence that the dimensions of Hashimura '863 are "working drawings", it is noted that the distances 0.2SH and 0.75SH in Figure 1 are positioned almost exactly at 20% and 75%, respectively, of the height SH.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuyama (US 3,825,052, newly cited) in view of Arai (US 4,082,132, newly cited). As best depicted in Figure 3, Matsuyama is directed to a heavy duty tire structure having a pair of bead portions, a pair of sidewall portions, and a crown portion, wherein said crown portion is formed by laying a single mix of tread over the radially outer edges of the sidewall rubber mix to form a circular junction. The reference, however, fails to expressly relate the junction point with the equatorial crown radius and the equatorial radius of the carcass structure. In any event, Matsuyama and Arai, which is similarly directed to a heavy duty tire, do provide several measurements that suggest that the tire design of the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention, as set forth below.

As stated in the previous paragraph, the limitations of the claimed invention are analogous to limitations (a) and (b) set forth above. In this instance, Matsuyama states that a distance y_1 , which is equal to 10% - 30% of the section height (equivalent to equatorial crown radius), separates the junction point from the axially outer edge of the tread. Thus, in the embodiment when $y_1=10\%$ (positively recited embodiment since value is an endpoint), the remaining tire portions (junction radius or height and tread camber) combine to define 90 % of the equatorial crown radius. As a result, to meet the limitations of the claimed invention, the tread camber needs to be less than 10% of the equatorial crown radius. In viewing the figures of Matsuyama, it is clearly evident that the tread camber is extremely small as compared to the section height of the tire. Furthermore, Arai suggests that a flat crown region is desired in heavy duty tires in order to prevent belt edge separation and uneven tread wear, it being recognized that a

flat crown region is analogous to defining a small tread camber (Column 1, Lines 5-36). Thus, in viewing Matsuyama and Arai, one of ordinary skill in the art at the time of the invention would have readily appreciated that the tread camber of Matsuyama is less than 10% of the tire section height, such that the resulting junction point height would be between 80 % and 90 % of the equatorial crown radius.

As per limitation (b), Figure 3 of Matsuyama clearly depicts the junction point (defined by distance y1) as being slightly below the equatorial radius of the carcass structure. Although the reference fails to provide any specific quantitative dimensions, the gross relative dimensions of Matsuyama do suggest a tire design in accordance to the limitations of the claimed invention (approximately 95%). As such, one of ordinary skill in the art at the time of the invention would have readily appreciated the junction point as being located at a radial distance that is greater than 90% of the equatorial radius of the carcass structure but less than the equatorial radius of the carcass structure. Lastly, with respect to limitations (a) and (b), applicant has failed to provide any unexpected results to establish a criticality for the claimed tire design, and as such, one of ordinary skill in the art at the time of the invention would have found the broad ranges of the claimed invention to have been obvious in view of Matsuyama and Aria.

4. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Hashimura '863 or Matsuyama in view of Aria, as applied to claim 1 above, and further in view of Hashimura (JP 06032114, newly cited). Hashimura '863, Matsuyama, and Aria are applied in the same manner as set forth above. These references, however, fail to suggest a circumferential groove in the region adjacent the junction point (within 10 millimeters radially outward or inward). In any event, it is

Art Unit: 1733

extremely well known and conventional to include a circumferential groove in the shoulder region where the junction point occurs. For example, Hashimura '114 depicts at least a single narrow groove in the shoulder region in order to reduce rolling resistance and provide anti-cracking properties. It should be noted that although Hashimura '114 fails to depict a junction point, it is evident from the figures that the circumferential grooves are positioned just below the equatorial radius of the carcass structure (analogous to junction point in Hashimura '863 and Matsuyama). Thus, one of ordinary skill in the art at the time of the invention would have found the 20 millimeter range of the claimed invention to have been obvious as it defines a plurality of radial positions which are suggested by Hashimura '114, it being noted that 20 millimeters defines approximately 10-20% of a conventional tire section height (depending on specific type of tire). Also, applicant defines a broad range of values for the groove depth (10-30% of sidewall thickness) that one of ordinary skill in the art at the time of the invention would have readily appreciated at the time of the invention. As such, it would have been obvious to include a circumferential groove close to the junction point and having a depth between 10 % and 30% of the sidewall thickness since such a groove is conventionally used in the shoulder regions of pneumatic tires for the benefits detailed above.

Allowable Subject Matter

5. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The reasons for indicating this claim allowable are detailed in Paper Number 7, Paragraph 5.

R sponse to Arguments

6. Applicant's arguments with respect to claims 1-4 have been considered but are moot in view of the new ground(s) of rejection. In this instance, applicant provides the following primary argument: both Willard, Jr. and Kita depict a tread/sidewall junction formed by folding the radially outer edges of the sidewall mixes over the axially outer edges of the tread mix and not by folding the axially outer edges of the tread mix over the radially outer edges of the sidewall. The examiner agrees with applicant that each of the above references is directed to the opposite junction assembly as compared to the claimed invention and as such, the rejections with respect to Willard, Jr. and Kita have been withdrawn. However, newly cited references Hashimura and Matsuyama clearly depict a single mix of tread rubber in which the axially outer edges of the tread mix are folded over the radially outer edges of the sidewall in accordance to the limitations of the claimed invention.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yamamoto (JP-4-153029) and Motogami (JP 5-24414) are directed to a pneumatic tire in which a crown portion is formed by folding the tread rubber mix over the sidewall rubber mix, wherein a series of circumferential grooves are present in the junction region. Seifert (US 4,462,447) teaches a pneumatic tire construction in which the tread rubber mix is folded over the sidewall rubber mix, such that the junction point is between 34% and 84% of the carcass section height (results in junction point being below 80% of equatorial crown radius). Wilson (US 3,508,595), Kajita (JP 5-8611), and Balbis (US 4,436,127) generally depict a crown structure formed

by folding the tread rubber mix over the sidewall rubber mix, wherein a junction point is formed at a radial position that is between the carcass section height and the half section height of the tire.


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(703) 605-4397**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Justin Fischer

July 10, 2002


Michael W. Ball
Supervisor, Patent Examiner
Telephone (703) 308-1700